



Geography of the Blogosphere: Representing the Culture, Ecology and Community of Weblogs

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The Map Is Not the Territory

The December 1998 issue of *Wired* magazine featured a map of the Internet developed at Bell Labs under the direction of Bill Cheswick, chief scientist at the Lumeta Corporation (Lumeta, 2004). Cheswick's team investigated topologies of the Internet and produced data that has allowed researchers to better understand distributed denial of service attacks, challenges and changes in routing systems and has afforded insight into the mathematics of graph theory. There is an interesting side effect to attempts to produce maps of the Internet (Cheswick, 2004). The map itself is part of the Internet it seeks to represent and we are left with a paradox not unlike producing an encyclopedia of encyclopedias. Should the compiler of the new encyclopedia include the meta-encyclopedia as an entry in itself? A map of the Internet produced on the Internet catches us in a virtual hall of mirrors.

Maps of any aspect of the Internet call for different approaches than traditional cartography for two reasons. First, any attempt to map the Internet using the Internet as a medium changes the thing it sets out to represent. Second, Internet maps are more than pictures of static--or at least relatively slow moving--features but are representations of ever changing systems of relationships. The blogosphere is an example of explosive growth in the number and complexity of interrelationship and community made possible by the Internet. Bloggers write into an ether populated by many millions of potential readers and in the context of hundreds of thousands, perhaps millions, of other blogs. The number of potential writers and readers and their interrelationship would appear to overwhelm any capacity to understand them in interpersonal terms of friendship and community. This paper considers difficulties in producing maps of the Internet that rely on conventional cartographic metaphors and suggests ecological and economic models offer a promising alternative way to understanding the cultural geography of the blogosphere. A range of interactions in and between weblogs are considered in order to suggest the scope and complexity of the blogosphere as a community and to open up further lines of sociological investigation.

Numbers of websites, connectivity, counts of web hosts and organizational infrastructure inform maps of this kind even as their representation influence further development of Internet structures. Representations of virtual contexts exhibit recursive processes. That is to say, the process of making the map produces feedback that transforms that which the map was intended to represent. Mapping the Internet is not only an analytical or technocratic exercise but one that is inherently social and relational, a feature of Internet life extending to all attempts to interact with, understand, or construct virtual places. These are arguably esoteric concerns despite their importance to the practices by which the Internet operates and the architecture of which it is composed. There is another aspect of the Bell Labs map, however, that speaks to communities beyond technical and engineering specialists. The ability to visualize the personal, organizational, (inter/trans)national and spatial relationships that constitute the Internet meant most of *Wired's* two-page article was devoted to a picture generated from Bell Lab's project. The visualization of spatial and communicative relationships appeals to a mute fascination with the scope and complexity of the Internet alongside the speed of its emergence and consequent ongoing effects on actual and virtual communities.

It turned out the Internet resembled a fantastically complex tree made up of more than 100,000 nodes branching out from a fantastical cyberspace *axis mundi* (Dodge, 2004; Notre Dame, 2004). Countless strands vanished below the threshold of sight forming connections that echoed both the complexity of neurological inter-relationships and the mystical simplicity of fractal posters on a dorm room wall. The map was seductive in its suggestion that each line bursting out from a node represented some luminous trace of personal, social and economic relationship. It was as if Jacques Lacan's theory of the Symbolic had been captured at last in a single image illustrating post-industrial human society (Evans, 1996). If a visual representation of the totality of a language--its vocabulary and syntactical order--could be comprehended at a glance it might look something like this. Each glowing line was more than a cipher for electronic connection and the grids of energy and infrastructure it overlay. The lines were metonymous with social, political and economic relationships ranging from the interpersonal to the international extending even to those conversations carried out at great speed among the machines themselves. A person encountering the Bell Labs map for the first time might try to place it over the all too familiar Mercator projection, to imagine the contours of continents or clusters of metropolitan city lights vibrating in sympathy with the Internet. An eye might be drawn ineluctably to some specific cluster and wonder if it represented a home town, an alma mater or a local ISP.

The map was, of course, a fantasy. There was no way for a layperson to identify this or that representation of a hub and place it over a familiar geography. In this the Bell Labs Internet map is only different marginally from any other map. All maps are abbreviations of the world that elicit fantasy connections even as they embody this or that pragmatic relationship to space, both social and geological. There is inevitably a consequent gap between physical dispositions of objects, peoples and spaces and their correlates in lived place. These are as varied as the animal tracks of agents of the state, morning commuters or the whimsical imperatives of the *flâneur* (Shields, 1994). This gap is both empirical and imaginary and as such can produce disappointments ranging from the disconcerting realization that Greenland is not the size of Africa to the sinking feeling upon recognizing the distance between Piccadilly Circus and the Euston Road is both more and less than its apparition in London Underground Tube diagrams. The linguist Alfred Korzybski famously counseled against mistaking the map for the territory (Potter, 1974). This is good advice, and fair warning, against missteps resulting from a misplaced pragmatics or a slip from the logic of targeted policing to an evening carriage ride in Central Park. Our visual and spatial metaphors enable a personal relationship to a plethora of overlapping socio-spatial systems and allow us an astonishing precision in scheduling given the ineluctable mathematics of bumper to bumper highway traffic. As maps, they must of necessity remain metaphorical for it is precisely in their abbreviation of the world that we can make our way through the complexity of the 1:1 scale version.

Some maps appear to me more intentional, more personal, than others. This is the difference between metaphors at the level of diagrams of transnational logistic chains and a line drawing on the back of a wedding invitation. We appear to have entered a period in history of the Internet when more and more of the latter are drawn in contrast with the technical and technocratic precision of the "techies" who created and maintained the system in its earlier incarnations. We may have reached a point where the volume of wedding invitations, local telephone trees and family photos outweigh corporate, governmental and professional data structures. This suggests the possibility not only that the map of the Internet has changed but that the territory itself has expanded in a virtual analogue of '50s suburbia. The early years of Usenet attracted anarchists, libertarians and techno-utopians hoping to act out frontier freedoms. Those years were followed quickly thereafter by anxieties at the encroachment of corporate exploitation of the Web. "Unreal estate" property speculators staking a claim to drugs.com or sex.org kept an eager eye on the virtual horizon for the railways to plant a coaling station on their patch of the virtual prairie (Dibbell, 2003). This worry found varied expression in disputes over ownership of trademarks and in competition to monopolize browser access to the Internet.

There are signs that this new way of imagining the "territory" of the Internet is not the story entirely of state or corporate encroachment on the liberties of hackers and anarchists. There may be something more radical underway as Internet systems escape the control of the techies themselves. Text messaging, file sharing and blogging all represent non-specialist uses of the Internet that can ignore effectively the engineering, let alone economic, infrastructures of which the system's architecture is composed. These habits of exchange, be they of conversation, music or gossip, are examples of networks having grown independently of the direction of this or that corporate or technocratic interest. The Bell Labs map of 1998 is not only out-of-date but might have difficulty taking into account these symbiotic relationships as they transcend the logic of official networks even as they are in turn mediated by and dependent upon them. It is a truism that maps of the Internet are out-of-date even as they are inferred. The map changes before it can be completed as the geography of the Internet grows through a nervous high-speed tectonic process.

It's a Beautiful Day in the Neighborhood

There is a more important conundrum, however, for the Bell Labs map. It is easy to mistake a map for a representation of things when it is in fact a representation of relationships and dispositions. There may be no better example for investigating a cultural geography of the Internet than the blogosphere. This means moving beyond the metaphor of maps and cartographies and into metaphors that better encompass systems and relationships. Economic and ecological metaphors offer ways of representing precisely these sorts of relationships. If a cultural geography of the blogosphere calls for a dynamic system of representation we need to consider the variety of ever-changing elements that compose relationships in and between bloggers, blogs and communities of bloggers and blogs.

Blogs may be thought of as nodal points within the broader system of energy flow that makes up the blogosphere. Some forms of energy are conventionally economic in character. A blog might, for example, include a PayPal donation button or other form of "tip jar" whereby a reader can send money to the blogger. This practice ranges from the informal, intermittent recognition of a blogger's writing as a commodity where a donation is made as payment in lieu of a subscription to a printed magazine or newspaper. Some have even been able to rely upon donation buttons as a form of alms for impoverished student bloggers trying to pay for bandwidth or as charity to a blogger getting by between jobs. An extreme instance of this practice is the *Daily Dish* written by offline media figure, Andrew Sullivan. Sullivan's readership, and status as a mainstream editor and journalist, appears to place the *Daily Dish* in the highly unusual position of employing one or two individuals thanks to tens of thousands of dollars raised in an annual PBS-style donation drive (Sullivan, 2002; Sullivan, 2004). Another common, and rather more modest, form of payment made available on many blogs is the inclusion of a "wish list" of items readers may purchase for the blogger in the form of gifts mediated by Amazon or other on-line enabled retailers. This practice is perhaps most prevalent among a specialized subset of bloggers known as "cam girls" whose confessional writing can attract wide readership.

Tip jars, donation buttons and wish lists all rely on offline systems of financial and commodity exchange for their logic and practice. The blog as conduit for these energy flows may be limited to another form of labor, specific to the Internet but unremarkable in economic terms. It is another unit of exchange, harder to quantify in economic terms and almost unique to hypertext mediated environments, that is at issue: the link. A private communication addressing my "field" research in the blogosphere illustrates the point.

I received a cheerful note from a fellow blogger, a person of some reknown in the blogosphere. *Why don't you link to my blog*, she asked, *I link to yours!* Internet etiquette has from the beginning been a work in progress and the relatively new context of the blogosphere offers the same communication challenges amongst people who are not sizing each other up

face-to-face. Arguably, a direct request for a permalink at another blogger's blogroll is slightly impertinent but my correspondent deftly softened her missive with a winking smiley emoticon. She knew her request was skirting the edges of an ill-defined blogger's manners guide but her smiley let me know not to take the request too seriously.

I clicked through. I was looking over a blog I had overlooked before. I have mentioned this to be a blog of repute, well written and with good leads to articles addressing political and cultural issues related to my own. Why indeed had I not linked to her blog before? Scrolling down her blogroll, scrolling way down, I remembered.. I try to keep no more than fifty or sixty links on my blogroll. Hers had hundreds. After several more seconds of scrolling I gave up and used my browser's find function to locate the link to my blog. Despite our comparable incoming links it was clear to me immediately that a link at my blog was worth more than a link at hers. I surfed away and did not reply to the email.

Stories of this kind represent a commonplace interaction in the blogosphere. While the Internet as a whole, and the blogosphere in particular, are made up of practically incalculable complexities of interaction these may all be articulated at the level of specific, particular and local instances of communication and, where human agency is concerned, of forms of courtesy. Courtly and diplomatic conventions were developed as means of facilitating communication between and amongst social classes, political and economic rivals and those few strangers one might encounter in medieval times when inter-communal travel was restricted. The possibility of miscommunication and conflict was offset by the advantage of cooperation emerging from conversation and relationship. The question at issue was often one of trust and the possibility of finding mutual advantage despite the potential for misunderstanding. Relationships of this kind are evident in any economic transaction and consequently the ability to enact effectively whatever form of exchange is at issue. Exchange of commodities are often less critical to the establishment and maintenance of social relationships than the less tractable media of obligation, status or trust. The form of the message is critical therefore to ensuring the future possibility of communication rather than any material exchange. The request for a permalink, such as that made in the vignette detailed above, is a small thing in comparison with a treaty of alliance between nation-states or pact between aristocratic lineages forged through marriage. It may even seem a trifling exchange compared to buying a newspaper and a cup of coffee on the way into work. There is no obvious financial transaction and in this sense may be mistaken for mere gossip escaping serious consideration alongside weighty issues of our current modes of production and exchange. The interaction is, however, one that may be understood to be both political and economic even as it is fundamentally interpersonal. In fact, it is an instance of exchange so fundamental to human sociality that it reveals "mere" gossip to be a matter of great consequence.

The blogosphere is made up of blogs and bloggers. These elements that make up the blogosphere as a system of blogs are often functionally interchangeable categories. Where bloggers can and do interact with little if any expectation of meeting one another directly and in the flesh, that is to say unmediated by the Internet, the voice of the blogger and its textual articulation as blog are placeholders for each other. It is important to note the blog is not only a signifier for the blogger as signified. Indeed, the non-local presence of the blog as sign allows the blogger to be inferred as a connotative signified of the blog as denotative sign. The blog is concrete where the blogger is an hypothetical reification of the blog as an enactment, an "actually-existing" sign. We can interact directly with blogs but find it more difficult to materialize each other as bloggers. There is a metaphysics of presence at play where we pretend other bloggers are in some sense there actually (and there and there) but our system of exchange is confined largely to text and hypertext. Anonymous and pseudonymous bloggers can in this way enter into the same systems of exchange as those bloggers whose identities are indicated in the form of proper names, professional and institutional accreditation and the particulars of an address. That a system of exchange should function at all on this basis is remarkable given the lengths to which monetary transactions are disciplined through unique social insurance numbers, password protected bank accounts and the hyper-individuation of credit cards. It is possible for

blogs to form reliable relationships of communication and exchange where the offline presence, let alone identity, of their authors remain anonymous, beings of pure inference.

Channeling exchanges between and among blogs takes the form of a variety of energy flows. The blogosphere can be thought of as a market that is made up not only of links but other forms of relationship and reciprocity. These multiple, overlapping and interconnected forms of exchange may be articulated using an ecological model. Indeed, the blogosphere may be thought of as a whole ecology even as it is a biome within the broader ecology of the Internet. The study of ecology, either as a science unto itself or as a subdiscipline of biology, is concerned with the interrelationship of living organisms (as expressions of genetic replicators, individuals, species or the totality of biomass) and environment (climatic and geological) (Bates, 2001; Dawkins, 1982). Ecological relationships are necessarily ones of mutual interrelationship interdependency expressed in flows of energy and the ongoing processes of feedback that make up the life histories of organisms and environments. Ecological processes are not limited to biological systems, however, but may be found in mechanical, chemical, physical, physiological, social, political and economic systems. Indeed, any human ecology is made up all these processes simultaneously. The map is not the territory. Each of these ecological systems are metaphors allowing us to abstract particular processes for purposes specific to the maps we make.

Energy in the blogosphere is expressed in a variety of ways. The primary unit of exchange may be the "link" whether in the form of a referral to a specific blog entry or a coveted permalink connecting one blog to another in its entirety. Links may be incoming or outgoing and make up the central distinction of blog writing as hypertext from the slow-moving "dead tree media" hyperlinks of standardized citation and indexing. Co-authorship loses its importance in blog dromologies, tropes of speed and ever-increasing speed of (ex)change (Virilio, 1986). Links are practically free--they cost little to nothing to include in a post as a formal economic act--but are nonetheless a medium of exchange and a sign of carefully considered reciprocity. A passing link from a widely read blog, such as the notorious "Instalanche" that knocks a smaller blog offline (once jokingly referred to as an inadvertent denial of service attack due to the volume of traffic such a link can generate), is much more highly valued than a link from a little known blog (Solo, 2003; Wikipedia, 2004). Even multiple links from a small blog do not outweigh a single Instalanche or its near equivalent thanks in part to Google metrics that dispense multiple links as so much spam and the imponderables of status that recognition by a widely read blogger may confer (Aylward, 2003; Treacher 2002).

The quantity and quality of incoming links may direct more traffic to a blog and along with it attract the attention of other bloggers who, in an expression of positive feedback, may choose to begin to link to the blog. Yet links are not ideally a commodity in themselves but a sign and channel for potential readers. There is a process of recursion at work as a blogger's increasing status and recognition in the blogosphere may serve to attract more readers but it is the quest for eyes-on-page that is at stake. Readership is quantified as "traffic" and expressed in the form of unique visitors, page views, hits and bandwidth usage over a given period of time. Any of these may be used as a rubric for incoming energy flows to a blog and their change through time serve as an indicator of a blog's success or failure. Site Meter, Awstats and eXTReMe Tracking are three services that serve currently (as of early 2004) to measure these incoming energy flows and the merits and deficiencies of each are debated by bloggers of differing status and seriousness. Site Meter, for example, has been accused of systematically undercounting "uniques" in comparison with AwStats. A further difference between these statistical devices is both social and rhetorical in that the identity and aims of any particular blogger are hypothetical in comparison with the material enactment of both identity and aims in the form of the blog as material artifact available to the social world. Users of Site Meter know their traffic statistics are available to the curious and so form a secondary text to the blog itself. An analogy might be made to an individual choosing to walk around with details of her bank account and pay slips printed on a sandwich board. Where details of reader traffic are available to all and sundry a blogger hoping to enter into relationships of exchange with other bloggers may find herself in the

position of a poker player forced to show her cards to other players even as she tries to form a winning hand. Unsurprisingly, Site Meter offers the publicly accessible statistics tool for free and charges a fee for statistics that are available solely to the blogger.

Other tools are available that make numbers of incoming links to a blog a matter of public record and ongoing speculation. Web services such as [Technorati](#) allow the curious blogger to calculate the number of incoming links from other blogs and, in so doing, make an inference about the relative status of a blog to other more or less widely linked blogs. Links are so fundamental to blog social hierarchies and so basic to exchange among blogs that "delinking" a blog is construed as a potential condemnation of a delinked blog as a response to poor etiquette, opposing political views or, worst of all, an assessment of a blog as unworthy to be read at all. Linking is in this way not only a metric of incoming energy flows, a channel for incoming readers and an indicator of social and rhetorical success. It is a positive practice where the production of an outbound link interpolates a blog into a broader system of relationship characterized by forms of reciprocity. Reciprocal linking of places in a permanent blogroll is a common expression of courtesy and an acknowledgement of a link from a specific post may often be made in the form of a return link from the linked blog. This reciprocal link as a gesture of thanks is important particularly to a lower status blog as it curries favor with one of higher status. The statistics packages that allow a blogger to monitor incoming links and traffic may be the best, most polite, route to attracting the attention of a higher status blogger in those instances where a direct request for a link may be construed as rude.

The current arbiter of the blogosphere as a whole is the [Truth Laid Bear Ecosystem](#) (Bear, 2004), an index of registered blogs whose evolutionary animal metaphor implies an ecological logic at work. Blogs are ranked by incoming links from other blogs registered in the Ecosystem making this a good analogy for a closed, but ever expanding, ecosystem operating in wider ecologies of the Internet. Blogs are ranked hierarchically from top predator InstaPundit described as a Higher Being down through tiers including Playful Primates, Flappy Birds, Lowly Insects all the way to Insignificant Microbes that subsist without a single incoming link to their name. Despite the animal metaphors the Ecosystem might be thought of as a Great Chain of Being as much as assertion of Linnean relationships. This is not only a description of energy flows but a catalogue of varying social status and influence in the blogosphere. Ranking within the Ecosystem is not only a raw indicator of incoming links but a context of intense competition among individual bloggers. It is not unknown for groups of blogs to band together in collective exchanges of links to "game" the Ecosystem in ways that are either constructed as socially acceptable fun or unacceptable cheating (Bear, 2003). It should be noted that despite the importance attributed to the Truth Laid Bear Ecosystem, and the increasing mainstream media recognition of its stars, the system only ranks seven thousand blogs in total as of early 2004. This would be a significant number of interrelated writers in most offline contexts and may represent an equally significant percentage of bloggers committed to punditry or citizen journalism in contrast with bloggers as diarists or journal writers. Given the apparent success of particular bloggers and emergent conversations in the blogosphere in effecting broader political and social debates, the Ecosystem represents the best guess for considering something analogous to climate change in the blogosphere. Yet seven thousand represents only a small fraction of the hundreds of thousands of active blogs and it remains to be established if this fraction is, has been or will be the most important subset of blogs as a sociological phenomenon.

Group blogs represent a further complication to systems of interrelationship between and amongst bloggers. The identity of author with text that may be evident in whatever partial or unstable sense is the case of printed texts is less evident in the partial, temporary and effervescent context of blog writing. The blogger as author-function may be itself destabilized when blogging is carried out as a collective activity, still more so when some or all bloggers involved in a group blog write pseudonymously as individuals or under a single *nom de plume*. Systems of exchange are in these instances not only primarily but inescapably transactions between and amongst blogs as radical subjects rather than bloggers as social actors. It may be

the only precedents for this superordination of text to author may be found in medieval scriptoria or nineteenth-century pamphleteers (Eakin, 2002). Here the medium as message is placed under erasure and the message itself is the medium, medium of exchange, and actually existing message.

Virtual Geographies

Social science offers tools for further insight into the manifold systems of exchange that both constitute and articulate the blogosphere. It is important to understand these tools are necessarily extraneous to most of the growth of the blogosphere to this point. The indigenous tools of the blogosphere produce an organic sociality that should not be confused with extra-contextual tools of analysis available to the social scientist or market research analyst. As with all speech-acts in the Internet the investigative tools of a sociologist, anthropologist or cultural geographer are capable of creating the Internet even as they explore it in much the same way, if to a much smaller extent, as search engine bots or uncounted spam-crawlers.

The demography of the blogosphere is of clear sociological interest. Mapping blogger populations and their communication networks and undertaking form and content analysis all construct the blogosphere as an undiscovered country. Studies of web proliferation in terms of rates of user growth and quantity of traffic have been conducted using a variety of tools to infer Internet topology. Weblogs, by contrast, have been relatively little studied using analogous tools even for the purposes of the pragmatics of marketing let alone as an exercise of significance to social change or as objects of academic interest. Speculation has to date been the preserve largely of journalism and organic investigation in the blogosphere itself. One peculiarity of this new sociality is that these organic intellectuals, to take advantage of the Gramscian use of the term, are often themselves academic or management professionals applying the same tools of analysis to their blog communities that they might to offline contexts.

Blog authoring tools and hosting sites offer a data source in addition to the statistical tools in use by individual bloggers. The likelihood of enlisting participation by Blogger, LiveJournal, Movable Type or other owners of blog writing or hosting platforms remains an open question given the proprietary nature not only of their services but the marketability of aggregates of data generated by bloggers constructed as users, clients or customers. Certainly, all of these actors are stakeholders in the blogosphere and will need to be considered even if other means of inferring blogosphere demographics succeed. The sphere of those who might be considered stakeholders may further increase beyond the limits of bloggers themselves, or even blog readers, as blogs continue to communicate political, social and economic events as "push media" drawing attention to, and action concerning, contexts in a manner unusual among largely passive consumers of television or print media. Where exceptions to the last two instances may be found the concerted attempt to influence an issue in the act of reporting it is a commonplace in the blogosphere. Blogging is in this way a self-consciously recursive process over and above perhaps inadvertent feedback processes of blog writing to the technical infrastructures that enable it as a system. Mainstream marketing firms have in limited instances attempted to take advantage of this feature of blogging as rhetoric in the form of "viral marketing" (Wikipedia, 2003). "Raging Cow", a carbonated milk beverage was promoted through media stories claiming to use bloggers to generate buzz (Walker, 2003). It remains unclear if the failure of the product was due to being an ill-considered attempt to market a carbonated milk beverage or whether it was mainstream reporting on the marketing strategy rather than blog networks themselves in play that drew attention to the product. The incident demonstrated nevertheless the capacity of the blogosphere for reflexive introspection of its social and rhetorical practices in relation to broader processes of advertising and commodification (Ireland, 2003).

This attempt at viral marketing further highlighted a distinction between blogger "nanopublishing" and the class-based and class-producing plant and capital requirements for

traditional modes of mass media production. The blogosphere is a potential context for advancing perspectives that are otherwise marginalized or forgotten in mainstream media. These include those placed in the subordinate position in conventional sociological categories of class, gender, race and age. Yet these categories themselves become subject to question in the context of identities and authorship that are more readily malleable than the discursive relations characteristic of most offline social interaction. The blogosphere affords the opportunity for relatively fluid signification in terms of gender, race, sexuality and so forth. This contextual mediation of identity in the blogosphere is analogous to online multiplayer simulated environments and presents comparable challenges faced by such environments in the construction of civil society though tends to be less beholden to single corporate owners of virtual geographies such as the Sims [Alphaville](#) or the online metropolis that is [Everquest](#). The fluidity of ascriptive social roles and discursive practices of identity enabled by the primacy of the blog over the blogger produces blogging as a communicative practice transcending many offline barriers and borders. Yet the importance of representations of the author-function, narrative coherence or even brand identity of a blog demonstrates the continuing importance of local particularities and identities that make the weblogs readable, interesting and especially relevant in global and local contexts. Ecologies of the blogosphere are in this way inextricably interpolated into practices of space and place in offline environments. In fact, one point of ongoing attraction to blog readers lies precisely in the expression of difference in particular places and social spaces articulated and communicated by people from other parts of the "real" world. The blogosphere is an environment in which new and unique trans-national and trans-cultural conversations and relationships emerge that are neither particular to locale, nor generalizable to commonplace abstractions of globalization. It may be that given ever increasing access to the Internet, social movements from the Zapatistas to the viral marketers may confound the utility of conceptualizing actual borders in terms of "trans"-anything.

All these sociological questions, and associated investigative approaches, are etic, that is to say external to sense-making practices indigenous to communities of the blogosphere. They are instead analytical and are cognate with clinical or laboratory studies of behavior. These are distinct from questions of concern to an ethologist studying organisms in their lived environments or of cultural anthropologists conducting field research taking participant observation as a primary investigative approach. As such, these tools are comparable in social distance from the active production of the blogosphere by bloggers as bloggers are in turn distant, and distinct from, the technocratic specialists who produce and maintain the Internet's basic architecture. It may be that participant observation is not only an optional means for social scientists to understand the blogosphere but the only approach consistent with the construction (both literal and metaphorical) of the blogosphere by individual blogs. All social worlds are the result of processes of structuration and recursion and in this sense point to the advantage of participant observation over purely quantitative research methods that risk reifying data at the expense of understanding a context in its own frame of reference. The social world of the blogosphere is unusual in that its enactment not only articulates a social structure or organismic function of a this or that ritual of habit of thought. The habitus itself, both social and physical, is literally the product of social action in the form of speech acts. Where the territory is itself a function of magic it may be that anthropology offers the only social science precedents for grappling with the products of sorcery.

The sheer complexity of the blogosphere's interconnectedness and rapidity of its growth present a final challenge for understanding it in terms of social space. Historically, individuals have commonly interacted with personages distant from themselves socially and spatially even when their social or physical mobility was limited by rudimentary systems of transport or communication. Relationships with persons at a metaphorical or literal remove might take the form of a socially distant aristocracy, cosmological figures in the form of deities or beings such as ancestor-spirits whose need to be propitiated was not lessened by their intangibility. Persons need not be physically present to be social actors in systems of communicative relationship. This has been a matter of concern to sociologists of mass media, advertisers and revolutionary

propagandists alike. Social distance mattered even when a relationship to media was limited to a few newspapers or broadcasters whose operation constructed and constrained the limits of conversation and any possibility of reciprocity in or reproduction of meaning. The scale of the blogosphere presents a challenge in raw numbers whose comprehensive complexity of relationship is several orders of magnitude greater than those apparent in traditional mass media. We are thrown back upon the limits of our nervous systems to cognize relationships of such scale and complexity. There is quite literally only so much time in the day to keep track of this or that blog alongside other conventional media sources and our offline social relationships. We must either find new ways to mediate this complexity or resort to primordial systems of animistic and totemic sense-making of social worlds too vast to grasp all at once or of a piece.

Biologist Robin Dunbar has advanced a theory of the development of language as an extension of grooming behavior (Dunbar, 1996). Our near relatives live in social groups that exhibit many features of trust, sociability and friendship as our own species. Other primates are as dependent upon their troops as units of social action for their subsistence and survival as we are to our friends, neighbors and broader communities of which we are a part. Members of primate troops typically form and maintain relationships of communication and trust through close physical contact in the form of grooming. This is as true for the almost silent gorillas as it is for the more frequent vocalizations of chimpanzees and full-on, non-stop orgies used by bonobos to keep things friendly. There is a direct ratio between the average size of troops as basic social units in these species to the use of calls and other vocalizations in addition to direct physical contact. Dunbar theorizes that as troop size increases so too does the number and complexity of social relationships that need to be maintained. Boundary effects occur past which vocalizations are used as a substitute means of expressing the orangutan equivalents of "hello" and "nice weather today" when there would not otherwise be time to maintain the same courtesies through touch. Where gorillas may live in troops of up to twenty individuals, chimpanzees in groups of twenty to fifty and bonobos in societies ranging up to 120 members the troop sizes in our species are considerably larger. Dunbar hypothesizes that language evolved from simpler call systems due to the needs of human troop members to communicate similar feelings of trust, community and obligation past the point where touch could account for every relationship that needed to be maintained. Gossip is, in this sense, an extension of grooming behavior and the origin of language.

Dunbar's speculation is of interest not only to biologists, primatologists and physical anthropologists but can inform more general speculations about human communication. Recent human history has seen us move from small-scale societies reliant on foraging practices precisely analogous to other hominids to urban societies more closely reminiscent of hive insects and with no analogue in other mammals, let alone primates (with the exception of the unloved mole rat). Despite this peculiar historical turn we have managed to make use of systems of communication developed in troop-scale social contexts and neurology evolved to deal with the east African savannah to produce vastly complicated large-scale societies (Harris, 1990). It is a remarkable turn of events made all the trickier by the exponential global population growth of recent centuries and our now massively interconnected systems of communication. Dunbar's thesis suggests nevertheless a constraint on our ability to comprehend social relationships. It may be that we are for the moment limited to some indefinite but absolute number of blogs we can possibly keep track of. Such a limit would underline the criticality of large-node linker bloggers such as InstaPundit and the popularity of a few influential thinker bloggers comparable to offline columnists or pundits. This potential limit to the number of blogs anyone could hope to read regularly may also circumscribe limits to numbers of blogs with whom to any given blogger may establish a community. While such a limit is for the moment a matter of speculation it is possible to infer such limits by a survey of blogrolls and examination of their features of interconnection. A weekly trip down the blogroll offering links to a blogger's friends may be analogous precisely to ongoing grooming practices in any primate social context. It would not be surprising to find blogosphere relationships, while not bounded by the same features of territory, class or border as those of the offline world, would nonetheless exhibit comparable features to troop scale social

interaction. The blogosphere, in other words, is made up not only an ecological totally and demonstrative of a clear rank hierarchy of popularity and status. It is also made up of neighborhoods of bloggers whose relationships echo the need for establishing trust, mediating systems of exchange and maintaining ongoing channels of communication as are found in offline human communities. There may be a limit not only to lines of sight on the Internet and our ability to conceptualize the blogosphere or the Internet as totalities. Instead, the blogosphere may represent a paradigm case for limits to all cognition of social relationship and consequently to communication itself. Conversely, the blogosphere offers an opportunity to explore the role of etiquette, courtesy and honor in the maintenance of community through sound rhetorical fences and the production of good virtual neighbors.

References

- Aylward, K. (2003, September 17). How to get an Instalanche. *Wizbang*. Retrieved January 18, 2004, from <http://wizbangblog.com/archives/000787.php>
- Bates, D. G. (2001). *Human adaptive strategies: Ecology, culture and politics*. Needham Heights, MA: Allyn and Bacon.
- Bear, N. Z. (Ed). (2003, November 29). Ecosystem suspensions pending. *The truth laid bear*. Retrieved January 18, 2004, from http://www.truthlaidbear.com/archives/2003/11/29/ecosystem_suspensions_pending.php
- Bear, N. Z. (Ed). (2004). The truth laid Bear ecosystem. *The truth laid bear*. Retrieved January 18, 2004, from <http://www.truthlaidbear.com/ecosystem.php>
- Cheswick, B. (2004). The Internet mapping project. Retrieved July 29, 2004, from <http://research.lumeta.com/ches/map/>
- Dawkins, R. (1982). *The extended phenotype*. Oxford: Oxford University Press.
- Dibbell, J. (2003). The unreal estate boom. *Wired*, 11(1). Retrieved January 18, 2004, from <http://www.wired.com/wired/archive/11.01/gaming.html>
- Dodge, M. (2004). Topology maps of elements of cyberspace. *An atlas of cyberspace*. Retrieved June 27, 2004, from <http://www.cybergeography.org/atlas/topology.html>
- Dunbar, R. (1996). *Grooming, gossip and the evolution of language*. Cambridge, MA: Harvard University Press.
- Eakin, E. (2002, August 10). The ancient art of haranguing has moved to the Internet, belligerent as ever. *The New York Times*. Retrieved January 18, 2004, from <http://www.nytimes.com/2002/08/10/arts/10TANK.html?tnemail1>
- Evans, D. (1996). *An introductory dictionary of Lacanian psychoanalysis*. (pp. 201-203). London: Routledge.
- Harris, M. (1990). *Our kind: The evolution of human life & culture*. New York: Harper Perennial.
- Ireland, T. (2003). The Raging Cow boycott. *Bloggerheads*. Retrieved January 18, 2004, from http://www.bloggerheads.com/raging_cow/

- Lumeta. (2004). Internet mapping project. *Lumeta.com*. Retrieved January 18, 2004, from <http://www.lumeta.com/mapping.html>
- Notre Dame, Physics Department. (2004). Image gallery. *Self-organized networks*. Retrieved June 27, 2004, from <http://www.nd.edu/~networks/gallery.htm>
- Potter, R. R. (1974). *Making sense: exploring semantics and critical thinking*. New York: Globe Book Company.
- Shields, R. (1994). Fancy footwork: Walter Benjamin's notes on flânerie. In Keith Tester (Ed.), *The Flâneur* (pp. 61-80). London: Routledge.
- Solo, J. (2003, October 23). 40k Today. *Jay Solo's verbosity*. Retrieved January 18, 2004, from http://www.elhide.com/solo/comments.php?id=1325_0_1_0_C
- Sullivan, A. (2002, December 19). *The Daily Dish*. Retrieved June 27, 2004, from http://www.andrewsullivan.com/index.php?dish_inc=archives/2002_12_15_dish_archive.html#90069953
- Sullivan, A. (2004). Tipping point. *The Daily Dish*. Retrieved June 27, 2004, from http://www.andrewsullivan.com/tipping_point.php
- Treacher, J. (2002, April 24). Instalanche. *Bloglossary*. Retrieved January 18, 2004, from http://bloglossary.blogspot.com/2002_04_21_bloglossary_archive.html
- Virilio, P. (1986). *Speed and politics*. New York: Semiotext(e).
- Walker, R. (2003, April 14). Blogging for milk: Raging Cow's new viral marketing gimmick. *Slate*. Retrieved January 18, 2004, from <http://slate.msn.com/id/2081419>
- Wikipedia. (2003, December 19) Viral marketing. *Wikipedia*. Retrieved June 27, 2004, from http://en.wikipedia.org/wiki/Viral_marketing
- Wikipedia. (2004, June 14). Slashdot effect. *Wikipedia*. Retrieved June 27, 2004, from <http://en.wikipedia.org/wiki/Slashdotted>